

REMARKS/ARGUMENTS

In the Office Action of August 20, 2009, claims 1 and 5-14 are rejected. Additionally, claim 4 is objected to, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In response, new claims 15-20 have been added. Support for new claims 15-20 is found in Applicants' specification at, for example, original claims 1-4 and page 5, lines 24-30. Applicants hereby request reconsideration of the application in view of the new claims and the below-provided remarks.

Allowable Subject Matter

Applicants appreciate the Examiner's review of and determination that claim 4 recites allowable subject matter. In particular, the Office Action states that claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

At this time, Applicants choose not to rewrite claim 4. Instead, Applicants respectfully assert that the pending claims are allowable based on the remarks below. Additionally, Applicants have added new claims 15, 17 and 19 to include similar limitations to claim 4. Because claim 4 recites allowable subject matter and new claims 15, 17 and 19 are similar to claim 4, Applicants respectfully submit that new claims 15, 17 and 19 recite allowable subject matter and are therefore allowable.

Claim Rejections under 35 U.S.C. 103

Claims 1 and 5-14 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Knutson et al. (U.S. Pat. No. 4,035,695, hereinafter "Knutson") in view of Takahira (U.S. Pat. No. 5,424,527). However, Applicants respectfully submit that the pending claims are not obvious over Knutson in view of Takahira for the reasons provided below.

Independent Claim 1

The Office Action suggests that Takahira teaches “*a mutual inductance that is determined based on a turning direction of said printed coil, a direction of winding of said air coil and a length of said air coil*” (emphasis added), as recited in claim 1. However, Applicants respectfully submit that Takahira fails to teach the above-identified limitation of claim 1. Thus, Applicants respectfully submit that claim 1 is not obvious over Knutson in view of Takahira.

Takahira teaches that a first spiral coil (51a) and a second spiral coil (51b) are obtained by forming spiral conductor patterns on a circuit substrate (110). (See Figs. 1-4, column 4, lines 54-56 and column 6, lines 29-32 of Takahira). That is, Takahira teaches structural relationship between two printed spiral coils (51a) and (51b) or coils of the same type. Because Takahira teaches two printed spiral coils, Applicants respectfully submit that Takahira fails to teach “*a mutual inductance that is determined based on a turning direction of said printed coil, a direction of winding of said air coil and a length of said air coil*” (emphasis added), as recited in claim 1. As a result, Applicants respectfully submit that claim 1 is not obvious over Knutson in view of Takahira.

Applicants note that Takahira teaches that the first and second spiral coils (51a and 51b) “are identical in their shape, size, number of turns, and winding pitch” (see column 4, lines 43-46), which is not possible for a printed coil and an air coil. Thus, one of ordinary skill in the art would not combine the teachings of Takahira to the teachings of Knutson, which further supports the conclusion that claim 1 is not obvious over Knutson in view of Takahira.

Dependent Claims 4-7 and 11-14

Claims 4-7 and 11-14 depend from and incorporate all of the limitations of independent claim 1. Thus, Applicants respectfully assert that claims 4-7 and 11-14 are allowable at least based on an allowable claim 1. Additionally, claims 11-14 may be allowable for further reasons, as described below.

Claim 11 recites that “*the turning direction of the printed coil is clockwise and the direction of winding of the air coil is right turn*” (emphasis added). Claim 12 recites that “*the turning direction of the printed coil is clockwise and the direction of winding of the*

air coil is left turn” (emphasis added). Claim 13 recites that “*the turning direction of the printed coil is counterclockwise and the direction of winding of the air coil is right turn*” (emphasis added). Claim 14 recites that “*the turning direction of the printed coil is counterclockwise and the direction of winding of the air coil is left turn*” (emphasis added). Applicants respectfully assert that Knutson in view of Takahira fails to teach the above-identified limitations of claims 11-14.

Knutson teaches a loop (52) and a coil (46). (See Fig. 2 and column 3, lines 28-38 of Knutson). However, Applicants respectfully submit that Knutson fails to teach that the loop (52) and the coil (46) have the turning direction and the direction of winding as recited in the above-identified limitations of claims 11-14. Additionally, as described above, Takahira teaches structural relationship between two coils of the same type, the first spiral coil (51a) and the second spiral coil (51b). However, Applicants respectfully submit that Takahira fails to teach that the first spiral coil (51a) and the second spiral coil (51b) have the turning direction and the direction of winding as recited in the above-identified limitations of claims 11-14. Thus, Applicants respectfully assert that Knutson in view of Takahira fails to teach the above-identified limitations of claims 11-14.

Independent Claim 8

Independent claim 8 includes similar limitations to independent claim 1. Because of the similarities between independent claim 8 and independent claim 1, Applicants respectfully submit that claim 8 is also not obvious over Knutson in view of Takahira.

Independent Claim 9

Independent claim 9 includes similar limitations to independent claim 1. Because of the similarities between independent claim 9 and independent claim 1, Applicants respectfully submit that claim 9 is also not obvious over Knutson in view of Takahira.

Independent Claim 10

Independent claim 10 includes similar limitations to independent claim 1. Because of the similarities between independent claim 10 and independent claim 1,

Applicants respectfully submit that claim 10 is also not obvious over Knutson in view of Takahira.

New Claims 15-20

New claims 15-20 have been added. Claims 15-20 depend from and incorporate all of the limitations of their respective base claims, i.e., independent claims 8-10. Thus, Applicants respectfully assert that claims 15-20 are allowable at least based on allowable claims 8-10. Additionally, as described above, claims 15, 17 and 19 include similar limitations to claim 4. Thus, Applicants respectfully submit that claims 15, 17 and 19 recite allowable subject matter and are therefore allowable. Furthermore, Applicants respectfully submit that claims 16, 18 and 20 are allowable because of their respective limitations.

CONCLUSION

Applicants respectfully request reconsideration of the claims in view of the new claims and the remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

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